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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,907	02/03/2004	Cyril A. Migdal	0206-PA	3867

7590 03/07/2007
CROMPTON CORPORATION
Benson Road
Middlebury, CT 06749

EXAMINER

LANG, AMY T

ART UNIT	PAPER NUMBER
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3731

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/771,907

Applicant(s)

MIGDAL ET AL.

Examiner

Amy T. Lang

Art Unit

3731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 11-14 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-10, 15-18, and 20-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 12/11/2006. In particular, claims 5-10, 15-18, and 20-25. This combination of limitations was not present in the original claims. Thus, the following action is properly made final.

All previous rejections not included in this office action have been withdrawn in light of applicant's amendments filed 12/11/2006.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 5-10, 15-18, and 20-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reyes-Gavilan (EP 1,054,052 A2) in view of Wegmann (WO 2005/023886 A1).

With regard to **claims 5-10 and 15-21**, Reyes-Gavilan discloses a lubricating composition comprised of lubricating oil and antioxidants ([0001], [0048]). The antioxidants encompass a hindered phenolic and a thioether compound having the formula $(C_{13}H_{27}OCCH_2CH_2)_2S$, which clearly overlaps the instantly claimed structure in claims 21 and 22. Additionally, the thioether compound overlaps the instantly claimed ditridecyldithiopropionate since both terminal alkyl groups comprise 13 carbon atoms (see instant specification page 5, lines 19-20). Reyes-Gavilan further teaches that other hindered phenolics than specified can be utilized in the composition ([00471]). However, Reyes Gavilan does not specifically disclose the hindered phenolic as butyl-3-(3-5-di-tert-butyl-4-hydroxyphenol)propionate.

Wegmann also discloses a composition that utilizes the combination of hindered phenolic antioxidants and thioether antioxidants to stabilize oxidation (page 1, lines 3-8; page 2, lines 10-12). The hindered phenolic antioxidant is further disclosed as an ester of (3,5-di-tert-butyl-4-hydroxyphenyl)propionic acid with a mono alcohol, such as methanol, ethanol, or octanol (page 7, lines 7-12). Since Wegmann discloses the mono alcohol as having either 1, 2, or 8 -OH groups, it would have been obvious for Wegmann to use butyl, since 4 -OH groups falls between 2 and 8. Therefore, the scope of Wegmann discloses a butyl-3-(3,5-di-tert-butyl-4-hydroxyphenol)propionate antioxidant.

The specific combination of antioxidants disclosed by Wegmann is shown to provide increased thermal stability from the comparative examples disclosed (page 23, lines 6-10).

Reyes-Gavilan discloses the combination of a hindered phenolic antioxidant and thioether antioxidant, where other hindered phenolic antioxidants than disclosed can be utilized. This combination is utilized to resist oxidation by increasing the thermal stability of the composition ([0003]). Wegmann utilizes the same combination, but with a specific hindered phenolic antioxidant, to also produce increased thermal oxidation of the lubricating composition. Since the combination of antioxidants disclosed by Wegmann is shown to produce beneficial results, it therefore would have been obvious to one of ordinary skill at the time of the invention for Reyes-Gavilan to also utilize the specific hindered phenolic antioxidant disclosed by Wegmann for the advantageous results.

The amount of the hindered phenolic antioxidant, as disclosed by Reyes-Gavilan, ranges from 25 to 60 wt% of the lubricating composition, while the amount of the thioether is from 5 to 30 wt% ([0047], [0062]). Therefore, the lubricating composition comprises 60 wt% of the hindered phenolic antioxidant, which is greater than the instantly claimed 40 wt%. Furthermore, if the hindered phenolic is present at 30 wt% and the thioether at 25 wt%, the ratio of hindered phenolic to thioether is 55:45, which clearly overlaps the instant claims.

Other additives are present in the lubricant composition of Reyes-Gavilan including viscosity index improvers, pour point depressants, dispersant, detergents, rust inhibitors, antiwear agents, metal deactivators, and other antioxidants ([0052] – [0060]).

With regard to **claims 22-25**, Reyes-Gavilan teaches incorporating the additional thioether antioxidant with the hindered phenolic antioxidant is advantageous ([0047]). Since Reyes-Gavilan is silent regarding how the thioether is incorporated into the lubricant composition, it would have been obvious to one of ordinary skill at the time of the invention to add the two antioxidants together as a blend solution.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy Lang whose telephone number is (571) 272-9057. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anhtuan Nguyen can be reached on (571) 272-4963. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

02/20/2007
Amy T. Lang

ATL


ANH TUAN T. NGUYEN
SUPERVISORY PATENT EXAMINER

3/4/07